IBM UPS5000 HV Uninterruptible Power Supply Solution

Highlights

- ***Space-saving 3U form factor for rack mounting***
- ***97% efficiency in green mode***
- ***Two C19 and eight C13 outlets protected by two 20A circuit breakers***
- ***Hot-swappable batteries for maximum uptime, availability, and ease of maintenance***
- ***Up to ten optional 3U IBM UPS Online Battery Packs (OBP) for scalable runtime requirements***
- ***Network Management Card provides standard serial and network communications as well as connections for environmental management***
- ***Emergency power off option to remotely power off UPS unit to prevent battery operation during power failure***
- ***Complete set of easy to use UPS management tools***

In today's high availability server environments, unplanned power outages or line quality irregularities can have a considerable financial impact on both small and medium and large enterprise businesses. Selecting the right Uninterruptible Power Supply (UPS) can efficiently, reliably and affordably help protect against these potentially costly incidents.

The IBM UPS5000 HV double conversion UPS packs 4500 watts of power into a space-efficient 3U form factor. This power dense solution provides maximum protection, increased efficiency and simplified power management to safeguard IBM System x® and BladeCenter® server environments.

Advanced power protection

The UPS5000 HV is a true double conversion online UPS that provides power quality that is superior to line-interactive UPSs. When input power quality permits, the UPS will enter Green Mode operation. This allows bypassing the inverter section leading

to 97% efficiency yet will revert to full double conversion when needed to regulate poor power input when detected.

The UPS5000 HV protects against the following power input irregularities:

- *Power failure*
- *Power sag*
- *Power surge*
- *Under voltage*
- *Over voltage*
- *Harmonic distortion*
- *Line noise*
- *Switching transients*
- *Frequency variation*

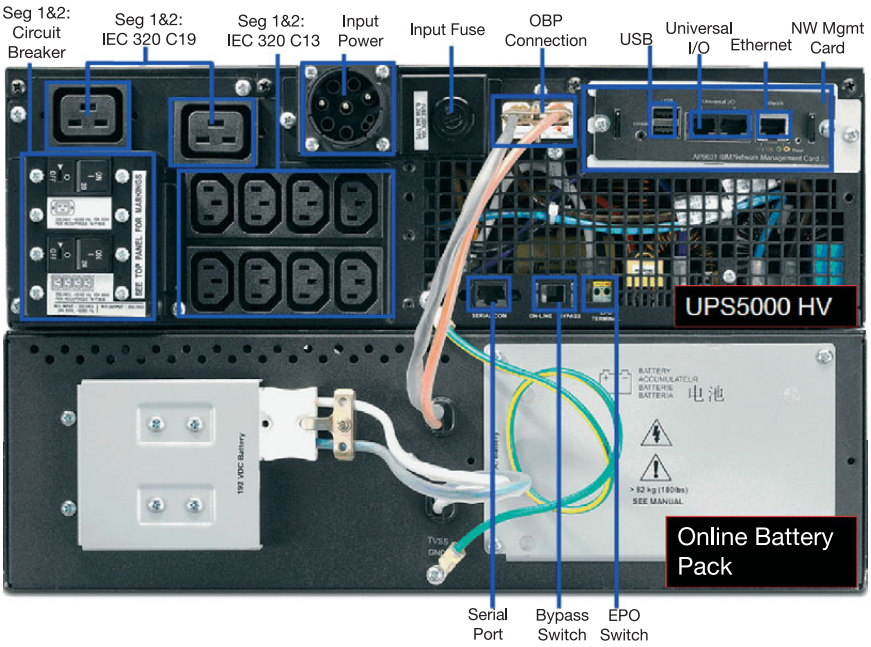
High power density

The UPS5000 HV's ability to supply 4500 W of backup power is more than many 6-kilowatt UPS units can supply. This is accomplished while only taking up 3U height of valuable rack space. This leaves more room for critical server and networking equipment.

Rich power-management solutions

Power management is critical in today's server environments. The UPS5000 HV comes complete with a suite of easy-to-use software tools that will allow for the management of the UPS either locally, with the standard serial connector, or remotely using the built-in 10/100baseT Ethernet interface on the included network management card.

The browser-based management functions provide the following capabilities: cycle power to attached servers, configure systems for non-disruptive shutdown, monitor power and UPS status or view power quality records. Integration of power management information into a single console can be accomplished using IBM Systems Director.



The IBM UPS5000 HV shown above connected to one Online Batter Pack (OBP) illustrates the configuration flexibility provided by eight C-13 and two C-19 outlets, expandability of adding OBPs and manageability supported by the standard Network Management Card.

The UPS5000 HV utilizes hot-swappable battery packs that allow fast, safe, and easy battery replacement without interrupting operation of the UPS or the devices connected to it.

Optional battery packs increase uptime

The UPS5000 HV allows the attachment of up to 10 Online Battery Packs, which dramatically enhances the system uptime. For example, with four Online Battery Packs you can have up to 75 minutes of additional run time at full load during a power crisis. The Online Battery Packs are 3U in height and hot-swappable, allowing for seamless scalability to address extended run time requirements.

Flexible configuration options

The UPS5000 HV is a rack-ready UPS product that supports preconfigured shipment in an IBM rack. It is also designed for scalability, allowing you to use the UPS unit and its external battery packs in configurations for multiple battery packs attached to every UPS.

The UPS5000 HV has a rear connector that mates with a variety of IBM line cords to match the power connector appropriate to the site. These line cords must be purchased separately.

A powerful partnership

The UPS5000 HV products are designed by IBM and manufactured to IBM's demanding specifications by APC by Schneider, a worldwide leader in power management and IBM's longtime power management provider. This means you get IBM's renowned service, support, and warranty protection worldwide along with APC's knowledge of UPS manufacturing and management software. This partnership enables a power protection solution that integrates into both IBM Systems Director and Tivoli® products.

IBM UPS5000 HV at a glance	
Model	UPS 5000 HV
Part number	24195KX
Form factor	3U rack-mountable
Rated output	5000 VA, 4500 W, 20A max from one IEC 320-C19 outlet, 25A max total
Input inlet/Current	26 A max
Input frequency	47 - 63 Hz (auto adjusting)
Efficiency	Up to 97% in green mode
Connections for management	Serial, and Ethernet network management card
Outlets	Two 20A circuit breakers. Each protects 4 IEC 320-C13 and 1 IEC 320-C19 outlets
Software included	PowerChute Business Edition 8.5, PowerChute Network Shutdown 2.2.3
Software support	AIX®: AIX 5L™ for POWER® Version 5.3, AIX Version 6.1 Microsoft® Windows®: XP Professional Edition, x64 Edition, Vista Business and Ultimate, x86, x64 Small Business Server 2003/2003 R2 Standard and Premium Edition, Windows Server 2003/ 2003 R2, Standard and Enterprise, x86 and x64 Edition, Windows Server 2008, Web and Standard, x86 and x64 Edition, Windows Server 2008, Enterprise x86 Edition, Windows Server 2003, Web Edition and Enterprise Edition for 64 Bit Itanium® Systems, NetWare 6.5 (SP 6), SUSE Linux® Enterprise Server 10 and 11 for x86 and for AMD64/EM64T. Red Hat Enterprise Linux 4: AS, ES and WS for x86 (4.7) and AMD64/EM64T (4.7), AS for Itanium (4.7), Red Hat Enterprise Linux 5 Server Edition x86 and x64 Editions (PCNS 5.3), Desktop and Desktop x64 Editions (5.3), IBM Systems Director 5.2
Weight	Net: 55 kg (120 lbs), shipping: 64 kg (140 lbs)
Dimensions (HxWxD)	Net: 130x432x660 mm (5.1x17.0x26.0 inches) Shipping: 347x603x980 mm (13.7x23.7x38.6 inches)
Color	Black
Warranty	3-year limited warranty
General features	Green Mode power-saving feature, emergency power off, optional UPS Online Batter Pack external battery packs, hot-swap batteries, integrated network management, intelligent battery management, overload indicator, rack mount, replace-battery indicator, resettable circuit breakers, input fuse, status indicator LEDs, audible alarm, software support
Environmental	Temp: 0 - 40°C (32 - 104°F) Relative humidity: 0 - 95% Operating altitude (max): 3000 m (10,000 ft)
Configuration aid	IBM Systems x and BladeCenter Power Configurator www-03.ibm.com/systems/bladecenter/resources/powerconfig/index.html
Approvals	EN 62040-1 and all relevant parts of IEC 60950-1, FCC, UL 1778, CAN/CSA 22.2, NOM, CE-Mark (EN55022 Class A), C-Tick Mark (AS/NZS CISPR 22:2004 (Class A)), IRAM, GOST, BSMI, VCCI-1, EK and KCC marks (Korea), TISI
Ship group components	Rail kit, hardware kit, UPS serial cable, NMC console cable, temperature probe, quick installation guide, warranty flyer, important notices flyer, documentation and software CDs.

Online Battery Pack options at a glance	
Part number	46M5386
Form factor	3U rack-mountable, ship-loaded approved
Battery information and run times	Up to 10 hot-swappable online battery packs supported Four online battery packs extend full load run time by 70 minutes.
Weight	91 kg (200 lbs); Shipping 101 kg (223 lbs)
Dimensions (HxWxD)	130x432x660 mm (5.1x17.0x26.0 in) 413x600x1000 mm (16.25x23.6x39.4 in) shipping

Line Cords required IBM UPS5000 HV

Option Part Number	Description
40K9612	IBM DPI 32a Cord (IEC 309 P+N+G)
40K9614	IBM DPI 30a Cord (NEMA L6-30P)
40K9617	IBM DPI Australian/NZ Cord
40K9618	IBM DPI Korean Line Cord

Runtime for UPS5000 HV internal battery and optional online battery packs (hh:mm)					
	Number of Online Battery Packs				
Load (W)	Internal	+1	+2	+3	+4
50	6:49	18:03	31:32	45:33	59:56
100	4:50	12:51	22:29	32:30	42:46
200	3:00	8:03	14:06	20:23	26:50
300	2:09	5:47	10:10	14:42	19:22
400	1:39	4:30	7:54	11:26	15:04
500	1:20	3:39	6:26	9:19	12:17
600	1:07	3:04	5:24	7:50	10:20
700	0:57	2:38	4:39	6:45	8:54
800	0:50	2:18	4:04	5:55	7:48
900	0:44	2:02	3:37	5:15	6:56
1000	0:39	1:50	3:15	4:43	6:14
1200	0:32	1:30	2:41	3:55	5:11
1400	0:26	1:16	2:17	3:20	4:25
1600	0:22	1:06	1:59	2:54	3:50
1800	0:19	0:58	1:45	2:33	3:23
2000	0:17	0:52	1:33	2:17	3:01
2500	0:12	0:40	1:13	1:47	2:22
3000	0:09	0:32	1:00	1:28	1:57
3400	0:07	0:25	0:50	1:12	1:40
4000	0:06	0:23	0:43	1:00	1:25
4500	0:05	0:20	0:38	0:54	1:15
Recharge Hours	3	9	15	21	27

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